

CLAIMS

The invention claimed is:

1. A panel constructed of material for installation on a ceiling as a component of a matrix grid of multiple said panels, with each said panel comprising:

at least one side edge of each said panel having a flange extension along at least a portion of the length of said side edge;

said side edge of said panel which immediately adjoins said flange having a concave female indentation along at least a portion of the length of said side edge;

the interior of said concave female indentation having two opposing interior surfaces, one of which is flat and the other of which has one or more protrusions, with said protrusions directed toward said flat interior surface;

each side edge of said panel not having said flange extension and not having said concave female indentation having instead a male extension;

said male extension having on it's surface one or more protrusions; and

said protrusions on said interior wall of said concave female indentation being configured and positioned to mesh with and interface with the corresponding protrusions on said male extension upon the male extension being inserted into said concave female indentation.

2. A panel constructed of material for installation on a ceiling as a component of a matrix grid of multiple said panels, with each said panel comprising:

at least one side edge of each said panel having a flange extension along at least a portion of the length of said side edge;

said side edge of said panel which immediately adjoins said flange having a concave female indentation along the length of said side edge;

the interior of said concave female indentation having two opposing surfaces, one of which is flat and the other of which has one or more convex protrusions, with said protrusions directed toward said flat interior surface;

said convex protrusions being capable of being temporarily plastically flexibly displaced or deformed, or both;

each side edge of said panel not having said flange extension and not having said concave female indentation having instead a male extension;

said male extension having on it's surface one or more protrusions and corresponding indentations;

said convex protrusions on the said male extension being capable of being temporarily plastically flexibly displaced or deformed, or both; and

said convex protrusions on said interior wall of said concave female indentation being configured and positioned to mesh with and interface with the corresponding protrusions and corresponding indentations on said male extension upon the male extension being inserted into said concave female indentation.

3. A panel constructed of material for installation on a ceiling as a component of a matrix grid of multiple said panels, with each said panel comprising:

at least one side edge of each said panel having a flange extension along at least a portion of the length of said side edge;

said side edge of said panel which immediately adjoins said flange having a concave female indentation along the length of said side edge;

the interior of said concave female indentation having two opposing surfaces, one of which is flat and the other of which has one or more convex protrusions, with said protrusions directed toward said flat interior surface;

said convex protrusions being capable of being temporarily plastically flexibly displaced or deformed, or both;

each side edge of said panel not having said flange extension and not having said concave female indentation having instead a male extension;

said male extension having on it's surface one or more protrusions and corresponding indentations;

said convex protrusions on the said male extension being capable of being temporarily plastically flexibly displaced or deformed, or both;

said convex protrusions on said interior wall of said concave female indentation being configured and positioned to mesh with and interface with the corresponding protrusions and corresponding indentations on said male extension upon the male extension being inserted into said concave female indentation;

each said flange extending for a minimum width from said side edge of said panel a distance at least as wide as the diameter of the head of a screw by which said panel can be affixed to a ceiling; and

each said flange having at least one hole through which a screw for affixing the said panel to said ceiling can be inserted.

4. The device of Claim 1 wherein the said surface of any said protrusion is coated, treated or otherwise conditioned or textured to thereby increase the coefficient of friction between the said surface and any other surface with which it may be in contact.

5. The device of Claim 2 wherein the said surface of any said protrusion is coated, treated or otherwise conditioned or textured to thereby increase the coefficient of friction between the said surface and any other surface with which it may be in contact.

6. The device of Claim 3 wherein the said surface of any said protrusion is coated, treated or otherwise conditioned or textured to thereby increase the coefficient of friction between the said surface and any other surface with which it may be in contact.

7. A flat panel constructed of tin sheet metal material for installation on a ceiling as a component of a matrix grid of multiple said panels, with each said panel comprising:

at least one side edge of each said panel, and no more than two contiguous side edges of said panel, having a flange extension along at least a portion of the length of said side edge;

said side edge of said panel which immediately adjoins said flange having a concave female indentation along at least a portion of the length of said side edge for insertion of a male extension in the course of installation of a ceiling;

the interior of said concave female indentation having two opposing interior surfaces, one of which is flat and the other of which has one or more protrusions, with said protrusions directed toward said flat interior surface;

each said protrusion being perpendicular to the plane of said interior surface;

each side edge of said panel not having said flange extension and not having said concave female indentation having instead a male extension;

said male extension having on it's surface one or more protrusions perpendicular to the plane of said surface; and

said protrusions on said interior wall of said concave female indentation being configured and positioned to mesh with and interface with the corresponding protrusions on said male extension upon the male extension being inserted into said concave female indentation.

8. A flat panel constructed of tin sheet metal material for installation on a ceiling as a component of a matrix grid of multiple said panels, with each said panel comprising:

at least one side edge of each said panel, and no more than two contiguous side edges of said panel, having a flange extension along at least a portion of the length of said side edge;

said side edge of said panel which immediately adjoins said flange having a concave female indentation along at least a portion of the length of said side edge for insertion of a male extension in the course of installation of a ceiling;

the interior of said concave female indentation having two opposing interior surfaces, one of which is flat and the other of which has one or more protrusions, with said protrusions directed toward said flat interior surface;

each said protrusion being perpendicular to the plane of said interior surface;

each side edge of said panel not having said flange extension and not having said concave female indentation having instead a male extension;

said male extension having on its surface one or more protrusions perpendicular to the plane of said surface;

said protrusions on said interior wall of said concave female indentation being configured and positioned to mesh with and interface with the corresponding protrusions on said male extension upon the male extension being inserted into said concave female indentation;

each said flange extending for a minimum width from said side edge of said panel a distance at least as wide as the diameter of the head of a screw by which said panel can be affixed to a ceiling; and

each said flange having at least one hole through which a screw for affixing the said panel to said ceiling can be inserted.

9. The device of Claim 7 wherein the said surface of any said protrusion is coated, treated or otherwise conditioned or textured to thereby increase the coefficient of friction between the said surface and any other surface with which it may be in contact.

10. The device of Claim 8 wherein the said surface of any said protrusion is coated, treated or otherwise conditioned or textured to thereby increase the coefficient of friction between the said surface and any other surface with which it may be in contact.

11. A method for installation of ceiling panels, wherein each of said ceiling panels includes at least one concave/female side edge and at least one convex/male side edge, with said concave/female side edge also having a flange extending away from the said ceiling panel, with said flange having at least one hole, comprising:

inserting a convex/male side edge of a first ceiling panel into a concave/female side edge of an adjacent second ceiling panel, whereby the said first panel and the said second panel are interlocked with each other;

placing the said first ceiling panel in direct contact with an overhead ceiling;

inserting one or more sheetrock screws through said hole or holes in said flange on the concave/female side edge of the said first ceiling panel; and

rotating the said sheetrock screws into the said sheetrock.

12. A method for installation of ceiling panels directly to a sheetrock ceiling, wherein each of said ceiling panels includes at least one concave/female side edge and at least one convex/male side edge, with said concave/female side edge also having a flange extending away from the said ceiling panel, with said flange having at least one hole, comprising:

inserting a convex/male side edge of a first ceiling panel into a concave/female side edge of an adjacent second ceiling panel which has already been affixed to said ceiling, whereby the said first panel and the said second panel are interlocked with each other;

placing the said first ceiling panel in contact with an overhead sheetrock ceiling;

inserting one or more sheetrock screws through said hole or holes in said flange on the concave/female side edge of the said first ceiling panel; and

rotating the said sheetrock screws into the said sheetrock.